This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended).

Method for intensifying the permeability of ground layers (B) close to boreholes and of filter bodies and filter layers (W) in the underground extraction area (F) of water wells and other production wells (11), ~~characterised in that~~ wherein liquid is continuously pumped away in the extraction area (F) of the borehole (11) by an underground pump (8), that the liquid thus displaced is successively impinged upon by energy pulses (E) in the direction of the borehole walls, the filter bodies and the filter layers (W) by continuously moving a pulse generator (1) up and down in the extraction area (F), and that the effect of each energy pulse (E) is evaluated by means of seismic measurements, and the parameters of the following energy pulses (E) determined according to the evaluation of the measuring results obtained for the previous energy pulse (E).

Claim 2 (currently amended).

Method according to claim 1, ~~characterised in that~~ wherein the energy pulses (E) are generated by a surface pressure unit (6) that

is connected in leak-proof manner via a pressure line (2) with the pulse generator (1) moved in the extraction area (F), said pressure unit (6) exerting a high pressure on a liquid – introduced via the pressure line 2 – in the pulse generator and ejecting said liquid at a defined pressure and for a defined period out of the pulse generator (1) into the liquid to be extracted.

Claim 3 (currently amended).

Method according to claim 1, wherein ~~and/or 2, characterised in that~~ the effect of each energy pulse (E) is registered by means of a seismic sensor (10) installed in situ on the pulse generator (1), transmitted via an instrument lead (3) to a control unit (9) located at the surface and evaluated there, and that after evaluation of the measuring signals, the parameters of the following energy pulse (E) are defined by adjusting the pressure exerted by the pressure unit (6) and by at least one control signal that is transmitted via a control cable (4) and triggers the pulse generator (1) at the defined time.

Claim 4 (currently amended).

Method according to claim 1, wherein ~~at least one of the preceding claims, characterised in that~~ a plurality of control signals are transmitted to the pulse generator (1) to trigger the

pulse generator (1) at the defined time, to set the liquid volume for the hydraulic pulse and to define the duration of the energy pulse (E).

Claim 5 (currently amended).

Method according to ~~at least one of the preceding claims, characterised in that~~ claim 1, wherein regeneration work is performed with weak energy pulses and, after the internal surfaces have been cleaned and the apertures in the screen (W) unclogged, is discontinued or interrupted, that the pulse generator (1) and the underground pump (8) are temporarily withdrawn from the production well (11) and the pulse generator (1) provided at its upper and lower ends with packer disks (P) that correspond to the internal diameter of the screen (W), that thereafter, the pulse generator (1) provided with the packer disks (P) is lowered to a terminal section of the screen (W) and, by means of the pressure unit (6), a regenerating liquid is pulsed or pressed via the pressure hose (2) and the pulse generator (1) with weak energy pulses (E) through the unclogged apertures in the screen (W) into the surroundings of the production well (11), i.e. into the aquifer (A), this procedure being repeated successively in sections corresponding approximately to the distance between the packer disks (P) on the pulse generator (1) until the other end of the screen (W) has been reached, that the pulse generator (1) is then withdrawn again from the production

well (11), the underground pump (8) lowered once more into the production well (11) and the regenerating liquid, after a defined period of action, pumped out completely along with the dissolved colmatants by the underground pump (8).

Claim 6 (currently amended).

Method according to claim 5, ~~characterised in that~~ wherein after the pulsing and pressing in of regenerating liquid and the subsequent withdrawal of the pulse generator (1) and the underground pump (8) from the production well (11), the packer disks (P) are detached again from the pulse generator (1) and the pulse generator (1) and the underground pump (8) then lowered once more into the production well, and that the regenerating liquid, after a defined period of action during concurrent up-and-down movement of the pulse generator (1) and simultaneous, successive emission of weak hydraulic energy pulses by the pulse generator (1), is pumped out completely, along with the dissolved colmatants, by means of the underground pump (8).

Claim 7 (currently amended).

Device for carrying out the method of ~~claims 1 to 4~~, claim 1, comprising ~~characterised by~~ a pulse generator (1) that can be lowered into the extraction area (F) of the borehole (11) and moved up and down in said extraction area (F), a seismic sensor (10)

installed on the pulse generator (1), a surface-located control unit (9) that is connected via an instrument lead and a control cable (3, 4) to the seismic sensor (10) and the pulse generator (1) respectively, a surface-located pressure unit (6) connected via a pressure line (2) to the pulse generator (1), and an underground pump (8) that can be lowered into the extraction area of the borehole (11).

Claim 8 (currently amended).

Device according to claim 7, ~~characterised in that~~ wherein the pulse generator (I) comprises: a cylinder in the upper portion of which a working chamber (12) of variable volume is located, said working chamber (12) being connected with the pressure line (2) and having outflow apertures (13) that are closed in the non-operative state, and in the lower portion of which a valve-closing chamber (15) is located, the two chambers being operatively interconnected by an electromagnetically operated valve piston (V) that can be moved downwards by momentary energisation of an electromagnet (14), thereby opening – by means of an upper valve disk (16) attached to the valve piston – the outflow apertures (13) and releasing the excessive pressure in the working chamber (12) as a hydraulic pulse; when the valve piston moves down, a lower valve disk (17) attached thereto causes a strong pressure increase in the valve-closing chamber (15), and immediately after the pressure in the working

chamber (12) has been reduced, the valve piston (V) can be pushed back into its starting position by means of the valve disk (17).

Claim 9 (currently amended).

Device according to claim 7, wherein ~~and/or 8, characterised in that~~ the liquid volume in the valve-closing chamber (15) and the pressure are controllable via a closing valve (18).

Claim 10 (currently amended).

Device according to ~~at least one of the claims 7 to 9, characterised in that~~ claim 7, wherein the upper and lower ends of the pulse generator (1) are each provided at times with a packer disk (P).

Claim 11 (currently amended).

Device according to claim 10, ~~characterised in that~~ wherein the diameter of the packer disks (P) corresponds to the internal diameter of the screen ~~W~~ (W) of the production well.